April 23, 2018

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95812

**Re: Amp Americas Response to Preliminary Draft Proposed Regulation Order and Staff Report to Low Carbon Fuel Standard Program**

Dear Chair Nichols and Board Members,

Amp Americas (AMP) is pleased to submit for consideration by the California Air Resources Board (ARB) our perspective on the proposed amendments to the Low-Carbon Fuel Standard (LCFS) rulemaking.

We believe that our recommendations will strengthen the LCFS program and promote additional private investments in low carbon intensity (low-CI) projects, including dairy biomethane, allowing the LCFS program to successfully reduce the carbon intensity of California fuels by 20% by 2030.

**Support of Change in Annual Carbon Intensity Requirements for Gasoline and Diesel**
AMP supports ARB's decision, outlined in section 95484, to target a 20 percent reduction in transportation fuel carbon intensity by 2030. AMP actively invests time, resources, and capital towards lowering GHG emissions and advancing technologies to decarbonize both California and the United States. Accordingly, AMP applauds ARB's efforts with their intent to not only advance these climate goals, but also to support LCFS credit prices which are instrumental to the continued development of biomethane projects both inside and outside of California.

**Allow for a minimum four quarter time span for Book and Claim for initial registration of Pipeline- Injected Biomethane Used as a Transportation Fuel**
In Section 95488.8(i)2(A), ARB staff proposes that Entities may report natural gas as RNG within only a two-quarter time span. This Book-and-Claim methodology forces RNG produced and injected in a given quarter to claim LCFS credits by end of the following reporting quarter or risk loss of LCFS credits. AMP believes this constraint is problematic for Tier 2 pathways that require significant modeling for approval of final pathways. AMP suggests that ARB allow for physical storage of gas using same requirements used by the EPA's RFS Program. AMP also suggests, at a minimum, ARB should allow for a four-quarter time span during the initial registration phase of a project and provide exemption from the book-and-claim requirement if there are significant registration delays. This will allow for project developers to have assurance that they will maximize financial benefits of their investment if there are unforeseen administrative delays. It also gives ARB

and project developers time to resolve such delays that arise without negatively affecting financial performance of the project.

**LCFS Third Party Verification should mirror RFS Third-Party Verification as much as possible**

In Section 95488 and elsewhere ARB outlines its decision to utilize Third-Party Verification for tracking, monitoring and reporting GHG emissions at facilities. AMP supports this decision. ARB's aggressive Carbon Intensity Benchmarks will require significant growth in the number of credit generating facilities. To date, ARB has relied on internal staff to evaluate fuel CI and audit quarterly reports. To speed up review and audit, Third Party Verifiers should be utilized in a similar way as the EPA Renewable Fuel Standard's (RFS) Quality Assurance Program (QAP). AMP recommends that ARB staff consider utilizing reporting overlaps between the LCFS Verification program and RFS QAP program. These include Independent Engineering visits, Operational data collection and quarterly affidavits for all entities involved in the pathway. Keeping similar requirements for both programs reduces the administrative burden placed on the project developer and can help streamline record keeping to achieve ARB's goal.

**Change Dairy Biomethane Temporary Fuel Pathway Look Up Value to -100**

In Table 8 of Section 95488.9(b), ARB defines the Temporary Fuel Pathway for Biomethane CNG and Biomethane LNG from feedstock Dairy as 0. AMP recommends that ARB staff set a temporary CI score of -100 to accurately account for dairy biomethane baseline. ARB's new proposal pegs the temporary (look up values) to the worst performing fuel pathway. AMP's facility is the only dairy project currently in the program. Prospective CIs of other dairy projects are also negative. Therefore, AMP is recommending ARB adjust the lookup value specifically for biomethane derived from dairy projects to accurately reflect data that is publicly available.

**What is the definition of Energy Economy Ratio (EER) in light of the new EER value for Heavy Duty BEV?**

In Table 45, ARB proposes to change the EER Values for all Electric Vehicles to 5.0.

In section 95481 (39), ARB defines "Energy Economy Ratio (EER)" means the dimensionless value that represents the efficiency of a fuel as used in a powertrain as compared to a reference fuel used in the same powertrain. EERs are often a comparison of miles per gasoline gallon equivalent (mpge) between two fuels. EERs for fixed guideway systems are based on MJ/number of passenger-miles.

AMP recognizes ARB's proposal to change the EER of heavy duty electric vehicles to 5.0. However, AMP asks for ARB's clarification in how the intent of EER is evolving to qualify the EER of a heavy duty electric vehicle as 5?

AMP believes that 2.7 was an appropriate EER for heavy duty electric trucks. For example: the Tesla Semi, the heavy-duty electric vehicle that has gained the most media coverage, has a stated fuel efficiency target of 2 kwh per mile. Assuming 3,412 btu per kwh, 85% charger efficiency (from Argonne National Labs AFLEET Tool), 6.3 miles per diesel gallon (DGE) of a heavy-duty combination long-haul diesel truck (also from AFLEET), and 129,500 btu per DGE: the Tesla Semi

has an EER of 2.56 to the diesel truck it will be replacing. Also, Argonne National Labs uses a ratio analogous to EER in its AFLEET Tool of 2.55 for heavy duty electric vehicles.

**Allow for Imported Low-CI Electricity**

AMP suggests ARB reconsider its stance on limiting renewable electricity supply to within the same California Balancing Authority. In fact, AMP believes ARB should be looking for ways to allow for imported sources of low-CI electricity to participate in the LCFS program.

In Sec 95488.8(i)1(A), ARB states "The renewable electricity must be supplied to the grid within a California Balancing Authority (or local balancing authority for hydrogen produced outside of California)".

According to the California Energy Commission, in 2016, 32% of California Power Mix (CA-Mix) was imported. Barring imported low-CI electricity from generating LCFS credits denies potential low-CI electricity generators an incentive that could be used to help clean up almost a third of the CA-Mix. If ARB does not incentivize low-CI electricity generation on imported electricity, it will not be addressing almost a third of the CA-mix. AMP believes that ARB is missing an opportunity to support potential low-CI electricity suppliers and that ARB should re-consider allowing imported low-CI electricity to earn credits in the LCFS program.

These comments and proposed changes will promote investments in low-CI projects, especially dairy biomethane, furthering the aims of the overall LCFS policy and its stakeholders.

Thank you for your time and consideration. Should you have any questions, comments or concerns, I am available to discuss further.

Sincerely,

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Director of Operations - Biogas, Amp Americas